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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/677,436	10/02/2003	Lifeng Zhang	A01449	9011
21898 7590 07/09/2007 ROHM AND HAAS COMPANY PATENT DEPARTMENT 100 INDEPENDENCE MALL WEST PHILADELPHIA, PA 19106-2399			EXAMINER ISSAC, ROY P	
			ART UNIT 1623	PAPER NUMBER
			MAIL DATE 07/09/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/677,436	Applicant(s) ZHANG, LIFENG	
	Examiner Roy P. Issac	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4 and 6-24 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 10-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This application claims priority under 35 U.S.C § 119(e) from the provisional application 60/417,854 filed 10/11/2002.

This Office Action is in response to Applicant's amendment/ remarks/ response filed 4/12/2007, wherein claims 3 and 5 have been cancelled and claims 1, 4, 8, 10 and 13 have been amended. Claims 1-2 and 10-24 are examined on the merits herein.

Rejections Withdrawn

In view of the cancellation of claims 3 and 5, all rejections made with respect to claims 3 and 5 in the previous office action are withdrawn.

Applicant's amendment reciting "and at least one branched chained or straight chained diisocyanate functional group of a size and configuration such that said diisocyanate functional group is capable of complexing with said hydrophobic cavity of said cyclodextrin-containing compound" overcomes the rejections of claims 1-2 and 10-24 under section 102(b) over Ma et. al.

Applicant's amendment reciting "and at least one branched chained or straight chained diisocyanate functional group of a size and configuration such that said diisocyanate functional group is capable of complexing with said hydrophobic cavity of said cyclodextrin-containing compound" overcomes the rejections of claims 1-2 and 10-11, 13-20 under section 102(b) over Lau et. al.

Applicant's amendment reciting "and at least one branched chained or straight chained diisocyanate functional group of a size and configuration such that said

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diisocyanate functional group is capable of complexing with said hydrophobic cavity of said cyclodextrin-containing compound" overcomes the rejections of claims 1-2 and 10-24 under section 102(b) over Eisenhart et. al.

The following are new grounds of rejection necessitated by applicants' amendments:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 10-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et. al. (ACS Symposium Series, 765, 2000, 254-270; Of record) in view of Anderson et. al. (Polymeric Materials Science and Engineering, 79, 1998, 411-412; PTO-892).

Ma et. al. discloses complexations of beta-cyclodextrin with hydrophobically modified ethoxylated urethanes (HEUR). (Abstract). Ma et. al. discloses the use of diisocyanate groups. (Page 261, Paragraph 2-3). Ma et. al teaches that stronger interaction between beta-cyclodextrin and thickeners is seen as the terminal hydrophobe size increases. HEURs are reported to displace phenolphthalein from cyclodextrin cavity. (Page 262, Paragraph 1). The recitation, "for a reduced viscosity hydrophobic thickener system for thickening a polymer-containing aqueous system" is

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considered an intended use of the composition. Note that it is well settled that "intended use" of a composition or product, e.g., "topical skin care composition", will not further limit claims drawn to a composition or product, so long as the prior art discloses the same composition comprising the same ingredients in an effective amount, as the instantly claimed. See, e.g., *Ex parte Masham*, 2 USPQ2d 1647 (1987) and *In re Hack* 114, USPQ 161. The recitations "wherein at least a portion of said cyclodextrin-containing compound is complexed with said hydrophobically modified associative thickener in such a way that at least a portion of at least one said phobes at least partially fills said hydrophobic cavity" is considered a functional recitation of an inherent property of the composition. The compositions of Ma are expected to have the same properties because it consists of compounds recited in claims herein.

Ma et. al. does not expressly disclose a hydrophobically modified polyethoxylated urethane thickener comprising a one branched chain or straight chained diisocyanate functional group.

Anderson et. al. discloses that hexane diisocyanate HEURs are also considered thickeners. (Page 411, Column 2, Paragraph 3). Anderson teaches that the use of hexane diisocyanate results in cleaner products and enhances the removal of urea. (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a hexane diisocyanate HEUR instead of a cyclohexane HEUR since the hexane HEUR was also recognized in the art as a thickener. One of ordinary skill in the art would have been motivated to use HEURs made with hexane

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diisocyanate because they were disclosed to have thickener properties and results in cleaner products. Therefore, one of ordinary skill in the art would have reasonably expected that the use of branched or straight chain HEURs would have resulted in substantially similar or better effects. Furthermore, choosing a thickener also known in the prior art with a hydrophobic end moiety to complex with cyclodextrin as claimed herein would have been within the routine skills of one of ordinary skill in the art.

Thus the claimed invention as a whole is clearly prima facie obvious over the combined teachings of the prior art.

Claims 1-2, 10-11 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lau W., et. al. (U.S. Patent No. 5,376,709; Of Record) in view of Anderson et. al. (Polymeric Materials Science and Engineering, 79, 1998, 411-412; PTO-892).

Lau et. al. discloses a method for reversibly suppressing the viscosity of an aqueous solution containing a hydrophobically modified thickener by complexing hydrophobic moiety with methyl-beta-cyclodextrin. (Abstract). Example 1 discloses a composition in which cyclodextrin is 4.9%, and contains Acrysol-RM-8, hydrophobically modified polyurethane thickener. Lau et. al. discloses the use of 17.5g solid grade RM-8 in a composition of 100g, resulting in a 17.5% (weight) composition. (Example 1, lines 62-68).

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Lau et. al. does not expressly disclose a hydrophobically modified polyethoxylated urethane thickener comprising a one branched chain or straight chained diisocyanate functional group.

Anderson et. al. discloses that hexane diisocyanate HEURs are also considered thickeners. (Page 411, Column 2, Paragraph 3). Anderson teaches that the use of hexane diisocyanate results in cleaner products and enhances the removal of urea. (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a hexane diisocyanate HEUR instead of a cyclohexane HEUR since the hexane HEUR was also recognized in the art as a thickener. One of ordinary skill in the art would have been motivated to use HEURs made with hexane diisocyanate because they were disclosed to have thickener properties and results in cleaner products. Therefore, one of ordinary skill in the art would have reasonably expected that the use of branched or straight chain HEURs would have resulted in substantially similar or better effects. Furthermore, choosing a thickener also known in the prior art with a hydrophobic end moiety to complex with cyclodextrin as claimed herein would have been within the routine skills of one of ordinary skill in the art.

Thus the claimed invention as a whole is clearly prima facie obvious over the combined teachings of the prior art.

Claims 1-2 and 10-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eisenhart et. al. (U.S. Patent No. 5,137,571; Of Record), in view of Anderson et. al. (Polymeric Materials Science and Engineering, 79, 1998, 411-412; PTO-892).

Eisenhart discloses a method for improving thickeners by complexation of cyclodextrin with hydrophobic moieties on the thickener molecule. Eisenhart discloses 0.5 to about 2% cyclodextrin. (Column 4, line 68). Eisenhart discloses solid content of 3% (Example 1; Column 7, lines 5-32), 8% solids (Example 5; Column 9, lines 28-31), and Acrysol RM-5 that contains 30% solids. (Table 18, Column 15, lines 5-10). Eisenhart discloses the use of polyethoxylated urethanes, and hydrophobically modified polyacrylamides. (Column 15, lines 40-50). The QR-708 thickner used in example 1 appears to be an ethoxylated polyurethane thickner.

Eisenhart et. al. does not expressly disclose a hydrophobically modified polyethoxylated urethane thickener comprising a one branched chain or straight chained diisocyanate functional group.

Anderson et. al. discloses that hexane diisocyanate HEURs are also considered thickeners. (Page 411; Column 2, Paragraph 3). Anderson teaches that the use of hexane diisocyanate results in cleaner products and enhances the removal of urea. (Abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a hexane diisocyanate HEUR instead of a cyclohexane HEUR since the hexane HEUR was also recognized in the art as a thickener. One of ordinary skill in the art would have been motivated to use HEURs made with hexane

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diisocyanate because they were disclosed to have thickener properties and results in cleaner products. Therefore, one of ordinary skill in the art would have reasonably expected that the use of branched or straight chain HEURs would have resulted in substantially similar or better effects. Furthermore, choosing a thickener also known in the prior art with a hydrophobic end moiety to complex with cyclodextrin as claimed herein would have been within the routine skills of one of ordinary skill in the art.

Thus the claimed invention as a whole is clearly prima facie obvious over the combined teachings of the prior art.

Conclusion

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

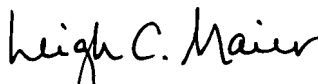
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roy P. Issac whose telephone number is 571-272-2674.

The examiner can normally be reached on 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia Anna Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Roy P. Issac
Patent Examiner
Art Unit 1623


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Art Unit 1623